

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An information processing system ~~having~~comprising:
a storage having a logical unit logically assigned to a physical ~~device~~, device;
and

a plurality of information processing apparatuses which are selectively connected to said storage and request data input/output from said storage, said information processing system requesting data input/output via a plurality of paths as communication channels to said logical unit, ~~wherein~~

wherein each of said information processing apparatus~~apparatuses~~
comprises:

an error detection section which detects occurrence of an error ~~occurred on~~ a path according to a result of a data input/output request;

a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and

a changeover section which uses a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output ~~from to/from~~ said logical unit~~unit~~.

wherein said error detection section specifies an instantaneous break error resulting from a path's instantaneous break, and

wherein said changeover evaluation section assigns a larger value to the number of paths used as a criterion for changing an information processing apparatus due to said instantaneous break error than a value assigned to the number of paths used as a criterion for changing an information processing apparatus due to errors other than the instantaneous break error.

2. -3. (canceled)

4. (currently amended) The information processing system according to ~~claim 2~~claim 1, wherein

said error detection section specifies a performance error resulting from path performance degradation, and

said ~~server~~-changeover evaluation section assigns a smaller value to the number of paths used as a criterion for changing an information processing apparatus due to said performance error than a value assigned to the number of paths used as a criterion for performing failover due to ~~the other errors~~errors other than the performance error.

5. (currently amended) The information processing system according to claim 1, wherein

said error detection section specifies a type of said detected error, and
said ~~server~~-changeover evaluation section uses a combination of ~~said a~~ plurality of specified types of errors to determine whether or not to change said information processing apparatus.

6. (currently amended) The information processing system according to claim 5, wherein

said ~~server~~-changeover evaluation section uses a result of totaling scores defined for types of errors occurring on a path to determine whether or not to change said information processing apparatus.

7. (currently amended) The information processing system according to claim 1, wherein

said ~~server~~-changeover evaluation section changes the number of paths used as a criterion for changing said information processing apparatus according to a load state of a data input/output request.

8. (currently amended) The information processing system according to claim 1, wherein

said ~~server~~-changeover evaluation section provides a time slot causing a high load state of a data input/output request with a smaller value assigned to the number of paths used as a criterion for changing said information processing apparatus than a value assigned to that for the other time slots.

9. (currently amended) An information processing system ~~having~~ comprising:
a storage having a logical unit logically assigned to a physical ~~device~~, device;
and

a plurality of information processing apparatuses which are selectively connected to said storage and request data input/output from said storage, said information processing system requesting data input/output via a path as a communication channel to said logical unit, ~~wherein~~

wherein each of said information processing ~~apparatus~~ apparatuses
comprises:

a path selection section which selects a path assigned with a data input/output request transmitted to said storage;

an ~~I/O~~ input/output transmission/reception section which transmits a data input/output request issued to a path selected by said path selection section;

an operation statistics management section which totals process states of normally terminated data input/output requests;

an error management section which detects occurrence of an error occurred on said path, specifies a type of said error, and totals the number of detected errors for each path and error type;

a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and

a changeover section which uses a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from to/from said logical unit unit.

wherein said error management section specifies an instantaneous break error resulting from a path's instantaneous break and a performance error resulting from path performance degradation.

wherein said changeover evaluation section assigns a larger value to the number of paths used as a criterion for changing an information processing apparatus due to said instantaneous break error than a value assigned to the number of paths used as a criterion for changing an information processing apparatus due to errors other than the instantaneous break error, and

wherein said changeover evaluation section assigns a smaller value to the number of paths used as a criterion for changing an information processing apparatus due to said performance error than a value assigned to the number of

paths used as a criterion for performing failover due to errors other than the performance error.

10. (currently amended) An information processing apparatus which is selectively connected to a storage having a logical unit logically assigned to a physical device and requests data input/output via a logical path as a communication channel to said logical unit, said apparatus comprising:

an error detection section which uses a result of a data input/output request to detect an error occurred on a path;

a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and

a changeover section which uses a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from said logical ~~unit~~unit.

wherein said error detection section specifies an instantaneous break error resulting from a path's instantaneous break and a performance error resulting from path performance degradation.

wherein said changeover evaluation section assigns a larger value to the number of paths used as a criterion for changing an information processing apparatus due to said instantaneous break error than a value assigned to the

number of paths used as a criterion for changing an information processing apparatus due to errors other than the instantaneous break error, and
wherein said changeover evaluation section assigns a smaller value to the
number of paths used as a criterion for changing an information processing
apparatus due to said performance error than a value assigned to the number of
paths used as a criterion for performing failover due to errors other than the
performance error.

11. (canceled)

12. (currently amended) The information processing apparatus according to claim 10, wherein

said error detection section specifies a type of said detected error, and

said ~~server~~-changeover evaluation section uses a combination of ~~said a~~ plurality of specified types of errors to determine whether or not to change said information processing apparatus.

13. (currently amended) The information processing apparatus according to claim 10, wherein

said ~~server~~-changeover evaluation section changes the number of paths used as a criterion for changing said information processing apparatus according to a load state of a data input/output request.

14. (currently amended) A control method of changing an information processing apparatus which requests data input/output from a storage having a logical unit logically assigned to a physical device via a logical path as a communication channel to said logical unit and is connected to said storage, said method comprising the steps of:

detecting occurrence of an error occurred on a path according to a result of a data input/output request;

detecting occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all ~~paths;~~ and paths;

using a determination result ~~from said changeover evaluation section to~~ change said information processing apparatus requesting data input/output from said logical ~~unit~~ unit;

in the step of detecting occurrence of an error on a specified number of paths, specifying an instantaneous break error resulting from a path's instantaneous break and a performance error resulting from path performance degradation;

in the step of using a determination result, assigning a larger value to the number of paths used as a criterion for changing an information processing apparatus due to said instantaneous break error than a value assigned to the number of paths used as a criterion for changing an information processing apparatus due to errors other than the instantaneous break error; and

in the step of using a determination result, assigning a smaller value to the number of paths used as a criterion for changing an information processing apparatus due to said performance error than a value assigned to the number of paths used as a criterion for performing failover due to errors other than the performance error.

15. (canceled)

16. (currently amended) The control method according to claim 14, further comprising the steps of:

specifying a type of said detected error, error, and

using a combination of said a plurality of specified types of errors to determine whether or not to change said information processing apparatus.

17. (currently amended) The control method according to claim 14, further comprising the ~~steps of:~~ step of changing the number of paths used as a criterion for changing said information processing apparatus according to a load state of a data input/output request.

18. (canceled)

19. (currently amended) A program ~~to control~~ executed by a computer for controlling an information processing apparatus, which requests data input/output from a storage having a logical unit logically assigned to a physical device via a logical path as a communication channel to said logical unit, said program ~~comprising~~ effective to control said information processing apparatus to perform the steps of:

assigning a larger value to the number of paths used as a criterion for changing an information processing apparatus due to an instantaneous break error than a value assigned to the number of paths used as a criterion for changing an information processing apparatus due to errors other than the instantaneous break error;

assigning a smaller value to the number of paths used as a criterion for changing an information processing apparatus due to a performance error other than a value assigned to the number of paths used as a criterion for performing failover due to errors other than the performance error;

~~means for detecting~~ detecting an error occurred on a path according to a result of a data input/output request;

specifying the instantaneous break error resulting from a path's instantaneous break and the performance error resulting from path performance degradation;

~~means for detecting~~ detecting occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and

~~means for using~~ using a determination result from said ~~changeover~~ evaluation section to change said information processing apparatus requesting data input/output from said logical unit.

20. (canceled)

21. (currently amended) The program according to ~~claim 19~~ claim 19, further comprising effective to control said information processing apparatus to perform the steps of:

~~means for specifying~~ specifying a type of said detected error, ~~error;~~ and

~~means for using~~ using a combination of said a plurality of specified types of errors to determine whether or not to change said information processing apparatus.

22. (currently amended) The program according to ~~claim 19~~ claim 19, further comprising: ~~means for changing~~ effective to control said information processing apparatus to perform the step of changing the number of paths used as a criterion for changing said information processing apparatus according to a load state of a data input/output request.